

# GLOBAL PRECIPITATION MISSION AND CANADA

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## SOME INITIAL THOUGHTS



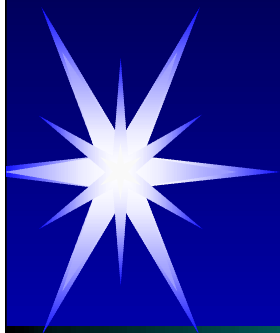
# CANADIAN PRECIPITATION ISSUES

- Water is a critical issue:  
water supply & quality, snowpack melt,  
floods & droughts, hydro-electricity,  
lake levels, tourism, transportation ...
- Snow is a major aspect of the precipitation  
regime with special challenges
- Inadequate observation of precipitation  
sparse surface network  
no radars in the North



# SOME SCIENTIFIC AND TECHNICAL QUESTIONS

- How much precipitation (rain, snow, mixed) falls over Canada and over what spatial and temporal scales?
- How is this precipitation produced (including its moisture sources) and what is its role within the overall water cycle?
- How well are we predicting precipitation with our NWP and climate models?
- How can we better handle precipitation-related issues in the future?



# A FEW ILLUSTRATIVE OVERHEADS GO IN HERE

Surface network (and reduction)

Radar network

Radar examples of falling snow

SWE example



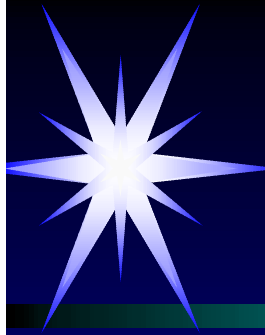
# WHAT CAN CANADA GAIN FROM GPM?

- Precipitation information over under-observed regions
- Potential application for ground-based radar
- Satellite information for snowcover (SWE)
- Data for NWP, climate & hydrological models
- Access to unique scientific data
- Part of international team addressing precipitation



# HOW CAN CANADA CONTRIBUTE TO GPM?

- Canadian monitoring network
- Canadian radar network
- Potential northern field sites
- NWP with data assimilation
- Hydrological modelling
- Expertise in:
  - precipitation physics and measurement
  - radar meteorology
  - snowcover measurement (satellite, in-situ)
  - cold climate research
- Large land mass with highly variable precipitation



# COMPLEMENTARY EFFORTS

- WMO

GCOS, Precipitation Intercomparison, ...

- World Climate Research Program

GEWEX, CLiC, CLIVAR, CEOP

- World Weather Research Program

- ...



# POTENTIAL CANADIAN INVOLVEMENT

- Meteorological Service of Canada
- Canadian universities
- ...